

CLAIMS

1. An image forming apparatus, comprising:

a head unit having a discharge nozzle for

5 discharging an ink wherein the head unit discharges the ink from the discharge nozzle to print an image on a recording sheet;

a conveyance unit confronting the head unit and conveying the sheet in a movement direction to a position

10 where the sheet confronts the head unit;

a charging unit provided in the conveyance unit to supply an AC bias voltage to the conveyance unit; and

a charge eliminating unit eliminating charge of a printing surface of the recording sheet, the charge

15 eliminating unit being disposed at a position on a downstream side of the charging unit in the movement direction of the conveyance unit and on an upstream side of the head unit.

2. The image forming apparatus of claim 1 wherein

20 the charge eliminating unit comprises a conductive member.

3. The image forming apparatus of claim 2 wherein

the charge eliminating unit is constituted by a pressure roller which pushes the recording sheet against the conveyance 25 unit.

4. The image forming apparatus of claim 2 wherein  
the charge eliminating unit is constituted by an electric  
conduction brush.

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5. The image forming apparatus of claim 4 wherein  
the electric conduction brush is configured to have a width  
that is larger than  $(1/2)X$  where X denotes a distance from a  
positively charged portion of the conveyance unit to a  
10 negatively charged portion of the conveyance unit.

6. The image forming apparatus of claim 1 further  
comprising a voltage supplying unit supplying to the charge  
eliminating unit a voltage of polarity which is opposite to a  
15 charging polarity of a conveyance belt of the conveyance unit  
at a position where the conveyance belt confronts the charge  
eliminating unit.

7. The image forming apparatus of claim 6 wherein a  
20 movement distance of the conveyance unit from the charging  
unit to the charge eliminating unit is represented by a  
distance that is obtained by subtracting  $(1/2)X$  from an  
integral multiple of X where X denotes a distance from a  
positively charged portion of the conveyance unit to a  
25 negatively charged portion of the conveyance unit.

8. The image forming apparatus of claim 6 further comprising a control unit controlling the voltage supplying unit so that no voltage is supplied to the charging unit and  
5 the charge eliminating unit when movement of the conveyance unit is stopped.

9. The image forming apparatus of claim 6 further comprising a control unit controlling the voltage supplying  
10 unit to vary the voltage supplied to the charge eliminating unit, depending on a kind of the recording sheet.

10. The image forming apparatus of claim 1 wherein the conveyance unit comprises a conveyance belt wound around  
15 at least two rollers, and the charge eliminating unit is disposed on a downstream side of a position where the recording sheet is conveyed along a curvature of each of said at least two rollers by the conveyance belt, in the movement direction of the conveyance unit.

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11. The image forming apparatus of claim 1 wherein the charge eliminating unit is disposed at a position near the head unit.

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12. The image forming apparatus of claim 11 further

comprising:

a sheet reversing unit reversing the recording sheet; and

a sheet separating unit separating the charge

5 eliminating unit from the recording sheet when the conveyance unit is reversely rotated to convey the recording sheet after the image is printed on the printing surface of the recording sheet, to the sheet reversing unit.

10 13. The image forming apparatus of claim 1 further comprising a heating unit heating the recording sheet, the heating unit being disposed at a position on an upstream side of the charge eliminating unit in the movement direction of the conveyance unit.

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